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## ABSTRACT

A middle layer network protocol enhancement, virtual connectivity (VC) makes the network attachment point changes of local and remote peers transparent to applications that use network services.  A virtual connectivity module local to each peer translates communication connection parameters from apparent to real and vice versa, as well as sending and receiving secure connection updates directly to and from peers. Unlike Mobile IP, no routing infrastructure modifications are required.  A subscribe-notify service provides connection update notifications when direct peer-to-peer connection updates are not possible, for example, when two communicating peers move simultaneously or when the moving peer is communicating with a peer behind network address translation (NAT).  Methods for detecting these conditions are disclosed, as is a virtual connectivity protocol and virtual connectivity module architecture.

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